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ABSTRACT

This study uses the Benefit Incidence Analysis to examine the distribution of public spending across different socioeconomic groups before and after the government of Malawi made great changes in educational policy in 1994. Primary education was made the top priority with increased spending on education and primary school fees abolished. The Malawi example shows an effective way to increase the equity of public spending in education is to increase the total allocation of public resources to primary education while easing the constraints on the demand for education faced by poor households. The challenge in the near future is to maintain current enrollment levels in primary schools and simultaneously to improve the quality of education. The book is divided into five chapters: (1) "Introduction"; (2) "School Enrollment"; (3) "Recent Changes in Enrollment: Important Inequities Remain in Primary Education"; (4) "Public Spending on Education"; (5) "Who Benefits from Public Education Spending?"; and (6) "Policy Implications." Numerous charts and graphs accompany the text. A 29-item reference list and two appendices conclude the volume. (EH)

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Who Benefits from Public Education Spending in Malawi?

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Who Benefits from Public Education Spending in Malawi?

Results from the Recent Education Reform

Florencia Castro-Leal

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CONTENTS

FOREWORD v
ABSTRACT vi
ACKNOWLEDGMENTS vii
EXECUTIVE SUMMARY ix

I. INTRODUCTION 1

II. SCHOOL ENROLLMENT 2
Important gains in school attendance 2
Enrollment rates are low and the poorest children are least likely to be in school 3
The poorest girls are least likely to go to school and most likely to drop out 4
Enrollment rates are higher in the Northern region 5
There is considerable age/grade mismatch 6
Most primary school graduates never attend higher education 7

III. RECENT CHANGES IN ENROLLMENT: IMPORTANT INEQUITIES REMAIN IN PRIMARY EDUCATION 9

IV. PUBLIC SPENDING ON EDUCATION 13
Public spending on education more than tripled 13
Public spending on primary education increased more than five-fold 14
Services and quality have deteriorated as enrollments have surged 16
Public spending on primary education increased, but bias against primary education persists 18

V. WHO BENEFITS FROM PUBLIC EDUCATION SPENDING? 21
Public spending in education has become more pro-poor.....23
More primary school children are among the poor 29
Girls receive about half the public education spending received by boys.....30
Public primary education resources are smaller in the rural Center and rural South because enrollments still lag behind.....30

VI. POLICY IMPLICATIONS.....34
Expanding access and reducing remaining inequities in education 34
Increasing effectiveness and quality of primary education 34

REFERENCES 35

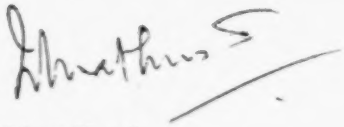
APPENDIXES
A: School enrollment and public education spending by quintiles, regions and gender 38
B: Methodology used to compute the distribution of education spending by socioeconomic groups 46

FOREWORD

The new Government of Malawi has made education, particularly primary education, its top priority. After public recurrent spending on education surged and primary school fees were abolished in 1994, Malawian households responded and primary-level enrollments jumped by more than 60 percent. Drawing upon our operational support to the Region, this study uses the Benefit Incidence Analysis to examine the distribution of public spending in education across different socioeconomic groups. The Malawi example shows that an effective way to increase the equity of public spending in education is to increase the total allocation of public resources to primary education while easing the constraints on the demand for education faced by poor households.

Recent public budgetary changes favoring primary-level spending, the removal of all primary school fees and the surge in enrollments at this level had a significant impact on the distribution of public education spending in Malawi. This is a very significant development. The challenge in the near future is to maintain current enrollment levels in primary schools and simultaneously to improve the quality of education. A decline in school enrollments among the poor would mean that the Malawian education reform could run the risk that recent gains in allocating resources to them would be reversed.

The Poverty and Social Policy Department hopes that policymakers, researchers, and practitioners engaged in the design of education reform programs will find this study useful and timely.



Ishrat Husain
Director
Poverty and Social Policy Department

ABSTRACT

Malawi's education system is hampered by problems of poor access, high repetition and drop-out rates, poor infrastructure and inequality. To address this situation the new Government of Malawi has made education, particularly primary education, its top priority. After public recurrent spending on education surged and primary school fees were abolished in 1994, Malawian households responded and primary-level enrollments jumped by more than 60 percent. This study uses the Benefit Incidence Analysis to examine the distribution of public spending in education across different socioeconomic groups before and after these changes.

Recent public budgetary changes favoring primary-level spending, the removal of all primary school fees and the surge in enrollments at this level had a significant impact on the distribution of public education spending in Malawi. In 1994-5, the poorest one-fifth of the population received 16 percent of all public education spending compared to only 10 percent in 1990-1, while the share going to the richest one-fifth of the population declined from 38 to 25 percent between the same years. The Malawi example shows that an effective way to increase the equity of public spending in education is to increase the total allocation of public resources to primary education while easing the constraints on the demand for education faced by poor households. The challenge in the near future is to maintain current enrollment levels in primary schools and simultaneously to improve the quality of education. A decline in school enrollments among the poor would mean that the Malawian education reform could run the risk that recent gains in allocating resources to them would be reversed.

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EXECUTIVE SUMMARY

Malawi's education system is hampered by problems of poor access, high repetition and drop-out rates, poor infrastructure and inequality. To redress this situation the new Government of Malawi (GOM) made education, particularly primary education, its top priority. In 1994, public recurrent spending on education more than tripled in real terms compared with its level in 1990; it went from 268 million Malawi Kwacha (MK) to MK900 million, expressed in constant 1995 MK. Primary-level spending more than five-fold in real terms during the same period, and its share has increased from less than half to almost three-quarters of total public education spending. This has been a very positive and needed development.

As a result of the recent education reform, the share of public education resources received by the poor increased substantially between 1990/1 and 1994/5 (see Table A). In 1990/1, *the poorest quintile received only 10 percent of all public education spending*, while the share going to the richest quintile was 38 percent. In 1994/5, there was a substantial reduction in the inequality of public expenditures for education; *the share received by the poorest quintile increased to 16 percent* and the share going to the richest quintile decreased to 25 percent.

Table A

Incidence of public education spending on the poorest and richest quintiles, 1990/1 and 1994/5, percentage share

Educational Level	Year	Education spending benefiting: the poorest 20% of the population (%)	Education spending benefiting: the richest 20% of the population (%)
All Education	*1990/1*	*10*	*38*
Primary		*15*	*24*
Secondary		*7*	*41*
Tertiary		*3*	*61*
All Education	*1994/5*	*16*	*25*
Primary		*20*	*16*
Secondary		*9*	*39*
Tertiary		*1*	*58*

Note: If public education spending were equally distributed across population quintiles, then the poorest and richest quintiles (every number in this table) would receive a 20 percentage share of spending.
Sources: HESSEA (1990/1); MOE (1993, 1995); GOM National Budget (1995).

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In 1994, the government abolished primary school fees as part of its commitment to raising the education levels of the population. Malawian households responded to this new priority and the number of children enrolled at the primary level jumped by 62 percent from 1.8 million to near three million students for the 1994/5 school year. Growth rates in primary school enrollments have been highest in the rural Central and the rural Southern regions - the poorest regions and those regions that had lagged behind in net enrollment rates in 1990/1. By contrast, enrollment rates in the rest of the country increased by less than 30 percent.

Despite the recent improvements, there are still serious problems and severe inequalities in public primary education. The quality of education, already severely compromised by large class sizes even before the recent surge in primary enrollment, has deteriorated further. The bulk of the recent increases in primary education spending has been spent on teachers' salaries. In 1994/5, recurrent spending on salaries consumed 97 percent of all primary recurrent expenditures. Although public education recurrent spending has increased to 7.5 percent of the Gross Domestic Product (GDP) in 1994/5, there continues to be a dearth of even the minimal number of essential teaching materials and human resources necessary to educate children.

There have been substantial gains in attendance at all levels over time, and the number of Malawians who have attended school has increased significantly. However, the poorest children are least likely to be in school and are most likely to drop out or to leave and return to school repeatedly, thus decreasing their chances of completing the primary cycle. Among the poorest children, girls are least likely to go to primary school and more likely to drop out than boys. Only 18 percent of all children enrolled in primary school complete the full eight years of primary education. Thus, most children never attend higher education, owing also in part to the limited number of places available at secondary schools.

Recent public budgetary changes favoring primary-level spending, the removal of all primary school fees and the surge in enrollments at this level had a significant impact on the distribution of public education spending in Malawi. The Malawi example shows that an effective way to increase the equity of public spending in education is to increase the total allocation of public resources to primary education while easing the constraints on the demand for education faced by poor households. The challenge in the near future is to maintain current enrollment levels in primary schools and simultaneously to improve the quality of education. Inequities in the distribution of education resources still remain across regions, within educational levels and by gender. A decline in school enrollments among the poor would mean that the Malawian education reform could run the risk that recent gains in allocating resources to them would be reversed.

I. INTRODUCTION

The recent policy reform in the education sector as well as the rapid increase in primary enrollments in 1994 are very significant developments in Malawi. This paper explores both issues separately and then brings them together to see if there are any changes in the distribution of social benefits.

There are two main factors that influence prevailing inequities in the amount of public education resources received by the population. First, there is the allocation of public resources to individuals in different socioeconomic groups, regions and by gender as a result of their consumption of public services. Second, there is the allocation of government spending within the education sector. The distribution of public education spending can be examined across different socioeconomic groups, regions and by gender through the allocation of per unit public spending according to individual utilization rates of public services. The methodology is known as *Benefit Incidence Analysis* and it measures how well public services are targeted to certain groups of the population, for example the poor and girls.

The 1990/1 Household Expenditure and Small-Scale Economic Activities (HESSEA) survey, conducted by the National Statistical Office of Malawi, was used to obtain school enrollment information. HESSEA is the only data set available in Malawi that can be used to analyze education indicators linked to household income and expenditure characteristics. Enrollments by educational levels for 1992/3 and 1994/5, as well as sectoral public spending information, were provided by the Ministry of Education (MOE). HESSEA and MOE data were used to compute *per capita* public education spending by income quintiles in 1990/1 and 1994/5.

This paper looks at educational indicators in Chapter II and III. Public education spending and the allocation of public resources within the education sector are explored in Chapter IV. Chapter V analyzes the distribution patterns of public education spending across socioeconomic groups and gender. The last Chapter discusses the most relevant policy implications coming from this study.

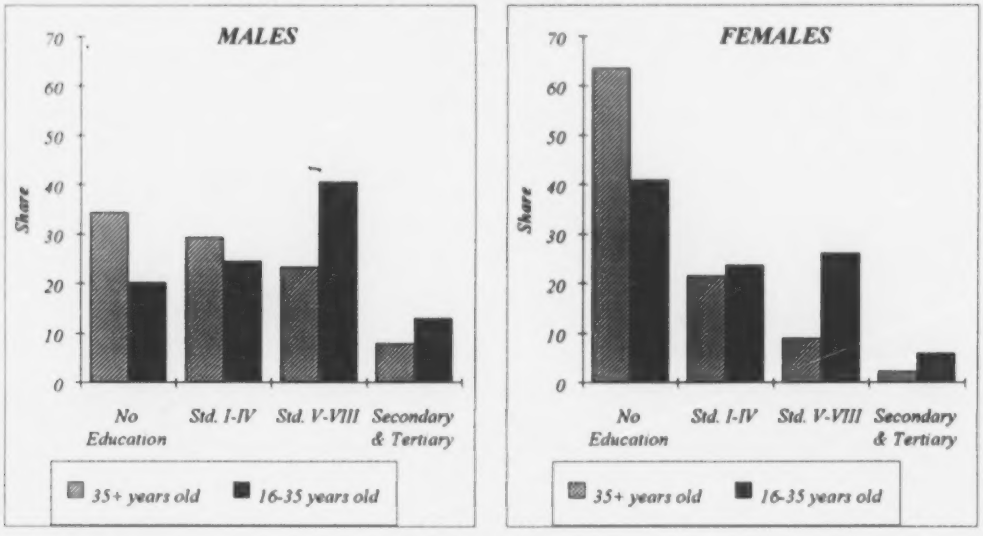
II. SCHOOL ENROLLMENT

Important gains in school attendance

There has been a substantial increase in the share of young adults receiving some primary education, completing primary school, and even attaining higher levels of education compared with the share of older adults who reached those levels in the past (see Figure 1). The number of Malawians who have never attended school has been significantly reduced. About one in three Malawians currently aged between 16 and 35 years old have never attended school, compared to one in two for those aged 35 years or older. The share of the population aged between 16 and 35 years old that has attained an educational level of at least Standard V to VIII has doubled compared with the population over 35 years of age.

Figure 1

Highest education level attained by adults in two age groups, 1990/1



Note: Appendix Tables A.1 and A.2 include percentage numbers.
Source: HESSEA (1990/1)

It is also clear from comparing these two age groups that disparities between men and women in educational attainment have declined, although the percentage of women who have never attended school remains higher than the comparable percentage of men. Among males, the share of those who have never attended school has declined from one in three for the older group to one in five for the younger group (see Figure 1). Among females, this share has declined from two in three for the older group to less than one in

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two for the younger group. Thus, gender disparities are still substantial among adults aged 16 to 35, but inequities between males and females are declining over time. The largest increase over time in school attendance in Standards V to VIII was among women. One out of every four women in the younger group reached at least Standards V to VIII, which is three times the number of the older group of females (only 9 percent) who reached this level previously.

Enrollment rates are low and the poorest children are least likely to be in school

Only about half of all children six to thirteen years of age were enrolled in primary schools in 1990/1 and children in the lower expenditure groups are much more likely to be out of school. Net primary enrollment rates are more than 40 percentage points lower in the poorest than in the richest income quintile (see Table 1). [1,2]

The gross primary enrollment rate is substantially higher than the net rate and this difference is more marked for the poorest than for the richest income quintile. Gross enrollment rates in primary school for the two lowest income quintiles are about double the net enrollment rates, confirming that late entry and repetition are more common among lower-income groups. Thus, the poor are more likely to drop out or to leave and return repeatedly, decreasing their chances of completing the primary cycle.

Table 1

Net and gross enrollment rates in primary education, 1990/1 by quintiles and gender

Hh Expenditure Quintile	*Net Enrollment Rates*			*Gross Enrollment Rates*		
	Boys	*Girls*	*National*	*Boys*	*Girls*	*National*
I - Poorest	*34*	*31*	*33*	*65*	*51*	*58*
II	*50*	*45*	*48*	*83*	*69*	*76*
III	*52*	*57*	*55*	*88*	*83*	*86*
IV	*66*	*61*	*62*	*104*	*89*	*97*
V - Richest	*76*	*75*	*75*	*113*	*106*	*110*
All	*52*	*50*	*51*	*86*	*75*	*81*

Primary education in Malawi takes a minimum of 8 years and it goes from Standard I to Standard VIII.

***Net enrollment rate**: 6-13 year olds enrolled in primary school as percentage of 6-13 year old population. Source: HESSEA (1990/91)*

***Gross enrollment rate**: All children enrolled in primary school as percentage of 6-13 year old population, Source: HESSEA (1990/91)*

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[1] Income quintiles are created by ranking every individual from the poorest to the richest and then dividing the population into five groups each containing exactly 20 percent of all individuals. Thus, the poorest income quintile contains the poorest one-fifth of the population while the richest income quintile contains the richest one-fifth of the population.

[2] We use expenditure quintile and income quintile interchangeably throughout the paper, but bear in mind that the welfare measure for ranking individuals is total household expenditure per adult equivalent.

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Gross enrollment rates are much lower for Standards V to VIII than for Standards I to IV. The decline in gross enrollment rates between the first- and the second-half of primary education is sharpest among the poorest children: two in three drop out compared to less than one in two among the richest children (see Table 2). In addition, the poorest children also have the lowest enrollment rates in both the first and second half of primary education.

Table 2

Gross enrollment rates in Standards I to IV and Standards V to VIII, 1990/1 by quintiles and gender

Hh Expenditure Quintile	*Gross Enrollment Rates Standards I to IV*			*Gross Enrollment Rates Standards V to VIII*		
	Boys	*Girls*	*National*	*Boys*	*Girls*	*National*
I - Poorest	*96*	*70*	*82*	*36*	*27*	*32*
II	*108*	*98*	*104*	*53*	*38*	*45*
III	*116*	*116*	*116*	*55*	*42*	*48*
IV	*132*	*115*	*123*	*76*	*58*	*68*
V - Richest	*133*	*151*	*142*	*88*	*68*	*77*
All	*114*	*102*	*108*	*56*	*43*	*50*

Primary education in Malawi takes a minimum of 8 years and it goes from Standard I to Standard VIII.
***Gross enrollment rate in standards I to IV**: All children enrolled in standards I to IV as percentage of 6-9 year old population.*
***Gross enrollment rate in standards V to VIII**: All children enrolled in standards V to VIII as percentage of 10-13 year old population.*
Source: HESSEA (1990/91)

The poorest girls are least likely to go to school and most likely to drop out

Gender disparities in net enrollment rates at the primary level do not appear to be significant (see Table 1), but the gross rate is systematically lower for girls than for boys across all the income quintiles. The poorest girls have the lowest enrollment rates in the first- as well as the second-half of primary education (see Table 2), and enrollment rates decrease substantially between these two cycles. These findings are an indication that girls aged 13 or older (captured in the gross rate) are more likely to drop out of school than boys aged 13 or older. Thus, it is crucial to put in place incentives for early primary school enrollment and retention of girls, particularly among the poorest and in the Southern region, as girls are more likely than boys to drop out as they get older.

Gender disparities in overall gross enrollment rates for primary education are considerably higher in the South than in the North or Central regions (see Appendix Table A.3). Boys in the rural South have an overall gross enrollment rate about 25 percent higher than the rate for girls, while in the rural North and Central regions, the gross rates are about the same for boys and girls.

Drop out from primary school among girls is particularly severe in the rural South. The gross enrollment rate for girls in the rural South drops by 60 percent between the first- and the second-half of primary education (see Appendix Tables A.4 and A.5). Girls in the rural South have an 89 percent gross enrollment rate in standards I to IV while it is only 29 percent in standards V to VIII.

Enrollment rates are higher in the Northern region

Children in the Northern region, from urban as well as rural areas, are the most likely to be enrolled in primary school. By contrast, rural net and gross enrollment rates in the Center and South are almost half of those in urban areas (see Table 3). Less than 50 percent of the children six to thirteen years of age were enrolled in primary schools in these rural regions in 1990/1. Disparities between rural and urban areas are also narrower in the Northern region than in the Center and South. Overall regional disparities are largely explained by lower rural enrollment rates in the rural Center and South.

Table 3
Net and gross enrollment rates in primary education, 1990/1
by region and area of residence

	Net Enrollment Rates			*Gross Enrollment Rates*		
Region	*Rural*	*Urban*	*Total*	*Rural*	*Urban*	*Total*
North	*73*	*84*	*75*	*117*	*129*	*118*
Center	*45*	*76*	*49*	*74*	*112*	*78*
South	*43*	*81*	*47*	*70*	*114*	*75*
National	*47*	*79*	*51*	*77*	*115*	*81*

Source: HESSEA (1990/1)

Children in the Northern region are the most likely to remain enrolled throughout all years of primary school. By contrast, children in the rural Center are most likely to drop out from primary school and children in the rural South have low primary enrollment rates throughout primary education. Children in the rural Center have higher gross enrollment rates in Standards I to IV than children in the rural South (see Table 4). However, these two regions have the same rates for Standards V to VIII (see Table 4). Educational policies for the rural Center and the rural South ought to approach two different sources of low completion. Primary schools in the rural Center need to increase their ability to retain children in school. In the rural South, enrollments in primary schools need to increase altogether.

Table 4

Gross enrollment rates in Standards I to IV and Standards V to VIII, 1990/1 by region and area of residence

Region	Gross Enrollment Rates Standards I to IV			Gross Enrollment Rates Standards V to VIII		
	Rural	Urban	Total	Rural	Urban	Total
North	139	150	140	94	106	95
Center	103	138	107	38	85	44
South	98	146	103	38	86	44
National	104	143	108	45	87	50

Source: HESSEA (1990/1)

There is considerable age/grade mismatch

Late entry to every educational level is very common, and older students are more likely to be enrolled than are students of the correct age group (see Table 5). The age/grade matching analysis also shows a bottleneck to complete primary school at Standards V to VIII, confirming that repetition is considerably higher at the end of this cycle.

Table 5

Age/grade matching, 1990/1

Level	Number of Students Enrolled	Age Group Percentage of Total Enrolled in Level						
		5 or less	6-9	10-13	14-15	16-17	18 or more	Total
Standard I-IV	993,377	2	34	44	12	5	4	100
Standard V-VIII	407,305	0	2	25	25	24	25	100
Forms I-II[a]	41,876	0	0	4	9	18	69	100
Forms III-IV[a]	17,839	0	0	0	2	8	89	100
Forms V-VI	145	0	0	0	13	11	76	100
Tertiary[b]	6,991	0	0	0	0	0	100	100

[a] Includes M.C.D.E. (Malawi College of Distance Education) students.
[b] Tertiary includes Primary Teacher Training, Technical Training and University.
Source: HESSEA (1990/1)

About 66 percent of all students enrolled in Standards I-IV are older than nine years of age, and around 75 percent of all students enrolled in Standards V-VIII are older

than 14 years of age (see Table 5). In Forms I-IV in secondary school, 75 percent of all students enrolled are older than 18 years of age. A recent study found that the average age in Standard I is 10 years of age and, in Standard VIII it is 22 years of age.[3] The main disadvantage of attending primary school at an older age is that these children are often needed to help to support the household. This becomes a disincentive for them to complete that level of education and to proceed to higher educational levels.

Most primary school graduates never attend higher education[4]

The number of students completing each educational cycle and enrolling into the next is extremely low. In 1990/1, only 18 percent of the children enrolled in primary school completed the full eight years of primary education (UNICEF, 1993). In addition, secondary schools offer only a limited number of places with the result that most children never attend secondary school. Only one out of every 100 children entering the primary cycle will be admitted to the secondary cycle.

The overall net enrollment rate in secondary schools is 2.2 percent, and the gross rate is about 10 percent. Given the recent surge in enrollments and the deterioration in the quality of primary schools, it is possible that a proportionally smaller number of children who complete primary schooling will attend secondary school in the near future, particularly in the Center and South.

Table 6
Net and gross enrollment rates in secondary education, 1990/1
by quintile and gender

Hh Expenditure Quintile	Net Enrollment Rates			Gross Enrollment Rates		
	Males	Females	National	Males	Females	National
I - Poorest	0.2	0.4	0.3	5.8	1.2	3.6
II	0.4	1.5	1.0	5.7	3.2	4.4
III	3.0	1.4	1.7	11.9	3.4	7.7
IV	2.4	3.0	2.7	19.5	12.7	15.9
V - Richest	10.4	6.5	8.3	40.5	20.0	29.4
All	2.5	2.0	2.2	13.6	6.8	10.2

Secondary education includes M.C.D.E. (Malawi College of Distance Education) students.
Primary education in Malawi takes a minimum of 4 years and goes from Form I to Form IV.
***Net enrollment rate**: 14-17 year olds enrolled in secondary school as percentage of 14-17 year old population.*
Source: HESSEA (1990/91)
***Gross enrollment rate**: All children enrolled in secondary school as percentage of 14-17 year old population.*
Source: HESSEA (1990/91)

[3] Hyde *et al.* 1994.

[4] Higher education refers to all post-primary education and thus, it includes both the secondary and tertiary levels.

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Practically no children from the two poorest income quintiles attend secondary school (see Table 6). Even in the highest income quintile, only 8 percent of youngsters aged 14 to 17 years old are enrolled at secondary school. Regional disparities in enrollments at the secondary-level indicate that Central and Southern gross enrollment rates are only two-thirds of the Northern rate (see Appendix Table A.6).

Gender disparities in enrollments at the secondary-level are substantially wider than at the primary level. Overall, gross enrollment rates for males are twice as large as for females (see Table 4). Females in the Central region are particularly disadvantaged, the gross enrollment rate is two and a half times higher in favor of males (see Appendix Table A.7).

Because transition rates, the proportion of students completing each cycle and enrolling in the next, are extremely low, it is also rare for Malawians to attend tertiary education. There are only about 7,500 tertiary-level students in Malawi, including students attending Primary Teacher Training, Technical Training, and University. In 1994/5, these enrollments represent a mere 0.3 percent of the total number of enrollments at all levels of education.

III. RECENT CHANGES IN ENROLLMENTS: IMPORTANT INEQUITIES REMAIN IN PRIMARY EDUCATION

The response from households and students in Malawi to the elimination of school fees and the priority given by the new government to primary education has been overwhelming. This section analyzes the distribution of the increase in enrollments across income groups, regions and gender using recent data from the Ministry of Education.

Estimated gross primary enrollment rates indicate that children from lower income groups who were identified as being disadvantaged in 1990/1 are likely to remain disadvantaged in 1994/5 (see Table 7). Major increases in gross enrollment rates occurred in the 1994/5 school year at every income level; however, half as many children from the poorest income quintile are enrolled in primary school as from the richest income quintile. The gross enrollment rate for the poorest income quintile is 74 percent, while the richest income quintile has a 134 percent rate.

Table 7
Gross enrollment rates in primary education, 1990/91 and 1994/5, by quintiles and gender*

Hh expenditure quintiles	*1990/1*			*1994/5*		
	Boys	*Girls*	*National*	*Boys*	*Girls*	*National*
I - Poorest	*65*	*51*	***58***	*100*	*69*	***74***
II	*83*	*69*	***76***	*117*	*88*	***102***
III	*88*	*83*	***86***	*118*	*98*	***114***
IV	*104*	*89*	***97***	*134*	*104*	***131***
V - Richest	*113*	*106*	***110***	*134*	*120*	***133***
All	***86***	***75***	***81***	***121***	***96***	***108***

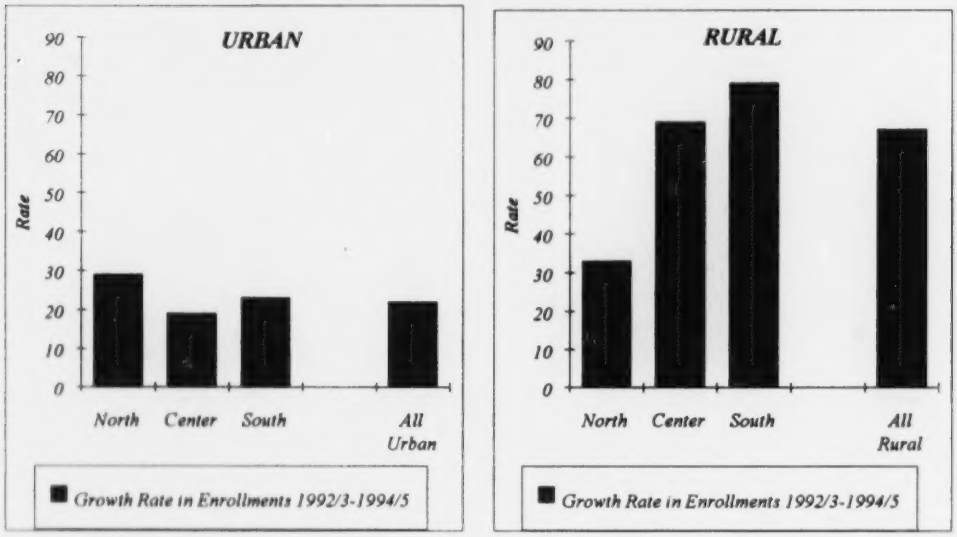
** 1994/5 enrollment rates are estimated on the basis of enrollments by regions provided by the MOE (1995) and taking HESSEA data as our baseline (see Appendix B for a description of the algorithm). The population by age groups in 1994/5 is estimated on the basis of the 1990/1 population and using a 3.3 percent annual population growth rate.*
***Gross enrollment rate**: All children enrolled in primary school as percentage of 6-13 year old population.*
Sources: HESSEA (1990/91); MOE (1993); MOE (1995).

Gender disparities in gross enrollment rates have increased for all income groups, but girls in the poorest income quintile have the lowest gross enrollment rate in the country - a gross enrollment rate of only 69 percent, almost one-third lower than boys.

Estimated gross primary enrollment rates by region indicate that, although the regional disparities are narrowing, the same regions that were relatively disadvantaged in 1990/1 are still disadvantages in 1994/5. Growth rates in primary school enrollments have

been highest in those regions that had lagged behind in net enrollment rates in 1990/1. Overall net enrollment rates for primary education in 1990/1 were lower in rural than in urban areas, and net enrollment rates in rural areas in the Central and Southern regions were almost half those in urban areas in the same region.[5] In recent years, these disparities have been narrowing. Between 1992/3 and 1994/5, primary enrollments in the rural Central region increased by 70 percent, and in the rural Southern region, by 80 percent (see Figure 2). By contrast, enrollments in the rest of the country increased by less than 30 percent.

Figure 2
Growth in primary enrollments from 1992/3 to 1994/5 by region

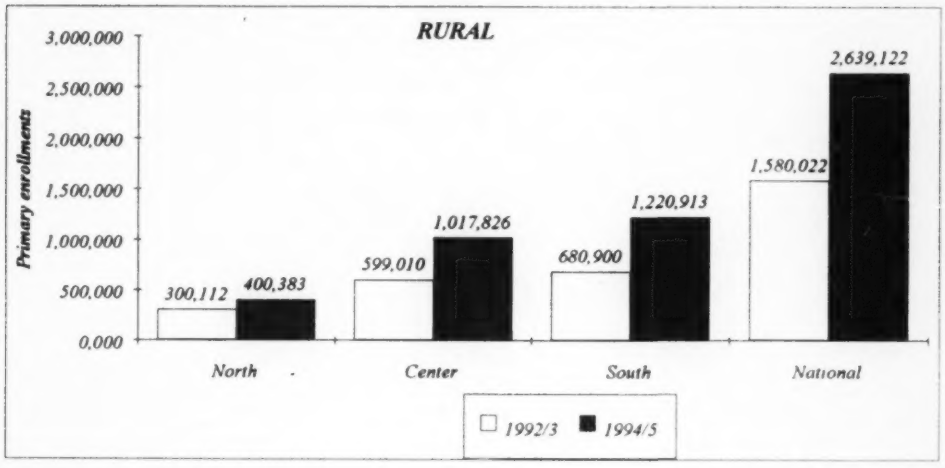


Sources: MOE (1993); MOE (1995).

Enrollments in the rural South and Center increased by more than 60 percent in 1994/5. In the rural South, enrollments surged from 700,000 to 1.2 million and in the rural Center they increased from around 600,000 to over 1 million (see Figure 3).[6] By contrast, urban enrollments increased on average by 22 percent between 1992/3 and 1994/5, and they are distributed more or less evenly across regions (see Appendix Figure A.1).

[5] Net enrollment rates in primary education by region and area of residence are shown in Table 3.
[6] By contrast, urban enrollments increased on average by 22 percent between 1992/3 and 1994/5, and they are distributed more or less evenly across regions (see Appendix Figure A.1).

Figure 3
Rural primary enrollments in 1992/3 and 1994/5, by regions



Sources: MOE (1993); MOE (1995).

Although regional disparities in gross enrollment rates have narrowed with the recent surge in enrollments, the rural Center and rural South still lag behind in primary enrollments, which are particularly low in these regions (see Table 8). Gross primary enrollment rates in the rural Center and rural South are around 100 percent, while the rate in the urban North is much higher - 167 percent.

Table 8
*Gross enrollment rates in primary education, 1990/1 and 1994/5,**
by region and residency

Region	1990/1			1994/5		
	Rural	Urban	Total	Rural	Urban	Total
North	117	129	118	142	167	143
Center	74	112	78	110	131	111
South	70	114	75	99	134	100
All	77	115	81	107	135	108

** Estimated on the basis of regional enrollments provided by MOE and using a 3.3 percent annual population growth rate.*
***Gross enrollment rate**: All children enrolled in primary school as percentage of 6-13 year old population.*
Sources: HESSEA (1990/91); MOE (1993); MOE (1995).

The surge in primary enrollments in 1994/5 has put tremendous stress on schools where classrooms are already badly equipped and where educational materials are scarce. The quality of primary education is more likely to have deteriorated in the rural Central

and Southern regions which are disproportionately affected by the lack of education resources. Since the rural Central and Southern regions contain the majority of poor students, these should become the priority areas for allocating public education spending as this should improve the access to primary schooling for the poor.

IV. PUBLIC SPENDING ON EDUCATION

The recent increase in the budget share allocated to primary education is a very positive development in the process of increasing investments in human capital and improving equity. The priority now is to restructure the composition of budgetary allocations within the sector to continue improving equity, and to raise the quality of service delivery.

Public spending on education more than tripled

Because of the policy shift in 1994/95, public recurrent spending on education has more than tripled in real terms between the 1990/1 and 1994/5 fiscal years, from MK267.5 million in 1990/1 to MK899.7 million in 1994/5, expressed in constant 1995 MKwachas.[7] Education resources almost doubled compared with the size of the Malawian economy, going from 3.8 percent of the Gross National Product (GNP) to 7.5 percent of the Gross Domestic Product (GDP), between the same years (see Table 9).

Table 9
Public financing of education

Fiscal Year	*Education Recurrent Expenditures as % Total Recurrent*	*Total Recurrent Expenditures % GNP*	*Total Recurrent Education Expenditures % GNP*
1988/89	*8.7*	*21.2*	*3.4*
1989/90	*12.3*	*21.3*	*3.4*
1990/91	*13.0*	*19.9*	*3.8*
1991/92	*11.8*	*19.9*	*3.1*
1992/3	*14.8*	*25.1*	*4.9*
1993/94	*17.2*	*21.7*	*4.6*
1994/95	*24.6*	*27.9*	*7.5**

** Percentage of GDP.*
Source: GOM National Budget

[7] These numbers were adjusted using the 1990/1 and the 1994/5 national consumer price index for non-food items (1990=100) provided by the Malawi National Statistical Office (1995). The numbers are 102 and 222.5 respectively. Similar estimates are obtained by using the GDP deflator (1988=100) for 1990/1 and 1994/5 provided by the IMF Database for Malawi (1995). The GDP deflator in 1990/1 is 143.9 and 318.1, in 1994/5.

Public spending on primary education increased more than five-fold

Primary-level recurrent spending has surged by 5.3 times in real terms between 1990/1 and 1994/5 and its share has increased from 45 to 71 percent of total recurrent spending in education (see Figure 4). As a result, public spending per student at the primary level more than doubled in real terms between the 1990/1 and 1994/5 school years, even after the sharp increase in enrollments. Per student spending in 1990/1 was MK86, and it increased to MK220 in 1994/5, expressed in constant 1995 MKwachas[8] (see Table 10). This in itself is a crucial development for resource availability in the sector as enrollments at the primary-level constitute the broad majority in both years, with 95 and 97 percent of the total. However, a more in-depth sectoral analysis shows that other constraints limit improvements in both the coverage and quality of education in Malawi, particularly at the primary level.

Table 10
Annual public recurrent spending on education by level, 1990/1 and 1994/5, in 1994/5 constant Kwachas

Education Indicator	*Primary*		*Secondary*[a]		*Tertiary*[b]	
	1990/1	*1994/5*	*1990/1*	*1994/5*	*1990/1*	*1994/5*
Recurrent Spending (ThKwachas)	*119,595*	*637,523*	*37,321*	*73,699*	*59,386*	*116,780*
(Percentage of Total)	*45%*	*71%*	*14%*	*8%*	*22%*	*13%*
Enrollments (Thousands)	*1,400.7*	*2,902.5*	*59.7*	*81.1*	*7.1*	*7.5*
(Percentage of Total)	*95.4%*	*97%*	*4.1%*	*2.7%*	*0.5%*	*0.3%*
Spending per student (Kwachas)	*86*	*220*	*626*	*909*	*8,323*	*15,523*

[a] *Secondary Level includes Secondary School and M.C.D.E.*
[b] *Tertiary Level includes Primary Teacher Training, Technical Training and University.*
Source: Basic Education Statistics, MOE (1993)

[8] *Ibid.*

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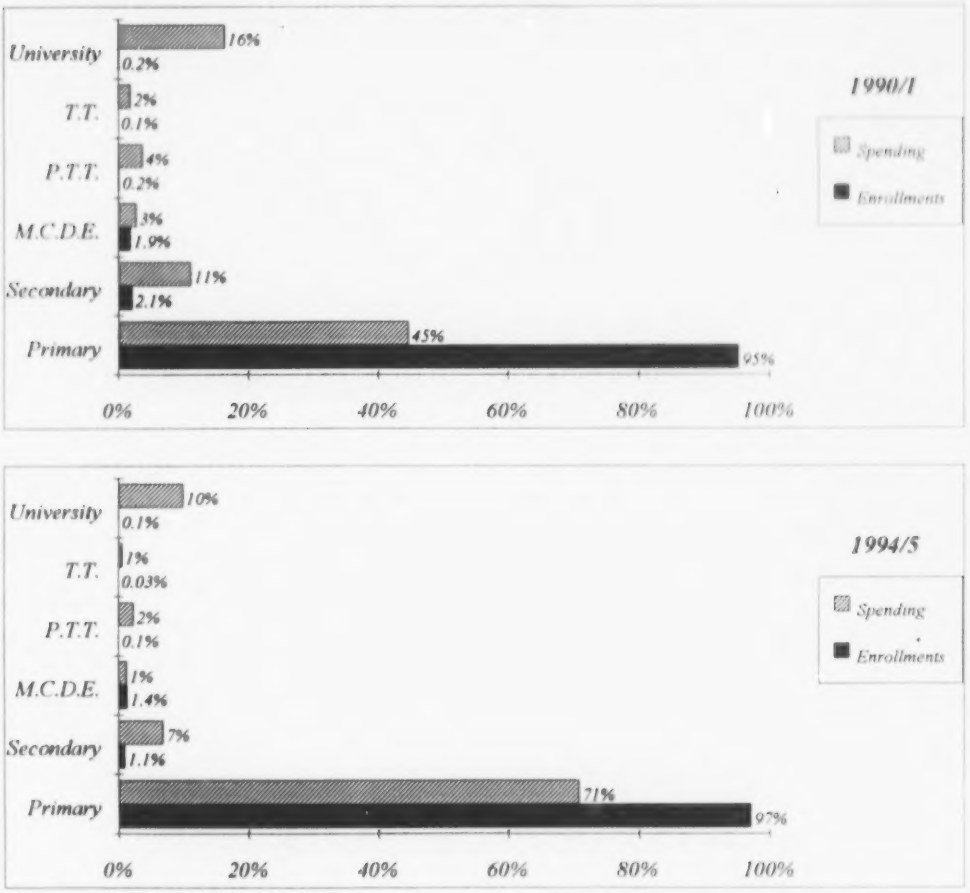
Fig. 4
Share of public recurrent spending on education and of enrollments, 1990/1 and 1994/5 by educational levels



M.C.D.E. = Malawi College of Distance Education
P.T.T. = Primary Teacher Training
T.T. = Technical Training
Sources: Ministry of Finance and Ministry of Education (1995).

Spending in other areas has experienced a relative decline as a result of the substantial increase in primary education spending (see Figure 5). In 1994/5, the structure of public recurrent spending in education is such that administration, with a 6 percentage share, receives about the same amount of public resources as secondary education, which receives a 7 percentage share. The Malawi National Examination Board (Maneb), with a 1.8 percentage share, receives about the same as Primary Teacher Training, with a 2.4 percentage share.

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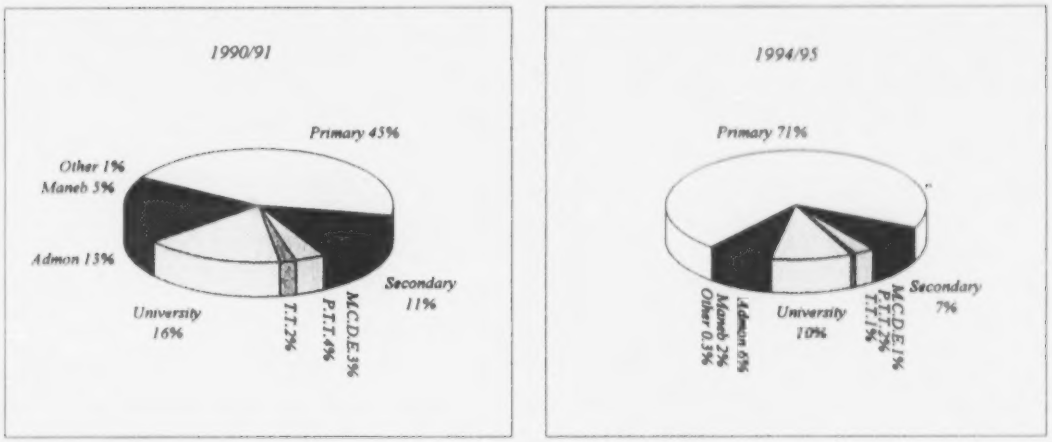
Fig. 5
Allocation of public recurrent spending on education, 1990/1 and 1994/5



Maneb=Malawi National Examination Board
M.C.D.E.= Malawi College of Distance Education
P.T.T.= Primary Teacher Training
T.T.= Technical Training
Source: Basic Education Statistics, Malawi Ministry of Education (1993)

Budgetary changes affected the Malawi College of Distance Education (M.C.D.E.) and Technical Training more severely than they have affected administrative functions. In 1994/5, the share of public recurrent spending allocated to the M.C.D.E. is only 1.3 percent, while Technical Training receives only 0.6 percent. All of these functions are important aspects of the education system. Secondary education comprises about 36,000 students, Primary Teacher Training is crucial given the scarcity of qualified teachers, the M.C.D.E. alone educates around 45,000 students, and Technical Training is an important terminal degree.

The increase in the budget share allocated to primary education is a very positive and much needed development in the process of increasing investments in human capital in a more equitable way. However, these dramatic changes represent a shock to the educational system, and time is required for the system to recover and to establish more balanced budgetary allocations within the sector. These issues are being addressed in the Policy Framework Paper which is being prepared by the Ministry of Education.

Services and quality have deteriorated as enrollments have surged

Estimates for 1994/95 show that the substantial increase in public spending has not been sufficient to avoid a decline in conditions in primary schools. Because of many years of under-funding for infrastructure and supplies, Malawi's public primary schools are

among the most poorly-equipped in Africa. Even after the recent increases in spending in primary schools, few new classrooms have been built and only a very small share of public education resources has been spent on non-salary quality items.

The bulk of the increase in spending has been used to finance the salaries of the newly recruited teachers. Recurrent spending on salaries has consumed 97 percent of all 1994/5 primary recurrent expenditures, compared with 89 percent in 1990/1, meaning that only US$0.30 per student was allocated to non-salary items during this most recent school year, in contrast to US$1.60 in the earlier year.[9] In 1992/3, it was estimated there were 78 children per qualified teacher (see Table 11), taking into account that 13 percent of primary school teachers in Malawi are considered to be unqualified. In the same year, there were 18 children per desk, 32 children per chair, and 102 students per classroom (MOE, 1993). After the rapid surge in primary enrollments without a proportional increase in budgetary allocations for non-wage items, quality indicators deteriorated even further. The number of children per qualified teacher, per desk, per chair, and per classroom all nearly doubled.

Table 11
Estimated quality indicators at the primary school level,[a] 1992/3 and 1994/5

Primary School Indicator	*1992/3*	*1994/5*
Pupils per:		
• *Teacher*	*68*	*77*
• *Qualified teacher*	*88*	*131*
• *Textbook (Basic subjects)*	*2.9*	*7.1*
• *Permanent classroom*	*102*	*422*
• *Chair*	*32*	*56*
• *Desk*	*18*	*31*
Internal efficiency:		
• *Repetition rates*	*18%*	*21%*[b]
• *Drop out rates*	*n.a.*	*12%*[b]

Note: n.a. = not available

[a] *Assisted and unassisted schools.*

[b] *Most recent estimates available at MOE.*

Sources: MOE (1993); Action Group (1995); Robinson (1994); MOE (1995).

[9] During the years of 1990/1 to 1994/5, donors contributions for textbooks and school furniture have been considerable. Thus, the fact that the government allocates a very small proportion of total recurrent spending to these items does not necessarily mean that there is no equipment available at schools but it is a reason for concern regarding the regularity of the annual supply of these materials since donors' projects last a discrete number of years.

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The gains from increasing recurrent spending on learning enhancement items can simultaneously improve quality and increase efficiency. Quality improvement allows new and existing students to learn the primary education curriculum more effectively, in turn, this can have a direct impact on efficiency gains by decreasing the average number of years taken to complete primary education (by reducing repetition and drop out rates). Non-salary spending allocations have a complementary positive impact on education: as student achievement rises, through improved learning, the total cost of a primary school graduate declines, through cost savings (Lockheed and Verspoor, 1991).

Children in Malawi attend schools in which the most basic pre-conditions for creating a positive learning environment are missing. Together with high rates of child malnutrition and limited access to primary schools (most children have to walk distances of up to six kilometers), this is most likely to have exacerbated the country's already low completion and, high repetition and drop out rates.

Last year's education policy reform led to a sudden influx of more than one million additional children eligible for primary school and the recruitment of about twenty thousand additional teachers. This surge in enrollments and educators has been a very positive development in itself. However, the deterioration in the learning environment at the primary level is one of the key factors currently compromising the provision of basic literacy, numeracy and problem-solving skills. A more balanced budgetary allocation between salary and non-salary recurrent spending in Malawi's education sector is urgently needed.

Public spending on primary education increased, but bias against primary education persists

The allocation of public spending *within social sectors* determines the availability of resources for primary, secondary, and tertiary services. Public funding of primary services is critical for providing basic education skills, for preventing transmittable diseases, for providing infant and pre-natal care, and for avoiding costly health treatments that might be needed in the absence of preventive care. However, enhancing the quality of these services is as important as increasing resource availability.

The pre-reform bias against primary education in the allocation of resources within the sector as a whole in Malawi is demonstrated by estimating how many primary students could be financed by the cost of one student in either secondary or tertiary education.[10] In 1990/1, a secondary-level student in Malawi was seven times as expensive as a primary-

[10] See table 10 for the shares of recurrent spending and enrollments in each educational level in Malawi.

level student, and a tertiary-level student was 97 times as expensive, while a university student alone was 165 times as expensive.[11]

This situation has improved considerably after the 1994/5 education reform, but remains inequitable. At present, the cost of one secondary-level student in Malawi could finance four students at the primary-level, while the cost of one tertiary-level student is now 71 times more than the cost of one primary-level student (see Table 12). University education is still very costly on a per student basis: a university student in Malawi is 103 times more costly than a primary-level student. A 13 percent allocation of public recurrent education spending to all tertiary-level institutions in 1994/5 is not disproportionally large. The much greater cost per student of higher and university education in Malawi is largely because there are very few students at this level. Progression rates from one educational level to the next are extremely low, so that very few students are admitted into tertiary education.

Table 12
Cross-country comparison of education financing per student, selected countries

Country	GNP Per Capita (1992 US$)	Primary Student Equivalent Cost*				Education Recurrent (% GDP)
		Primary	Secondary	Tertiary	University	
Malawi (1994/5)	220	1	4	71	103	7.5
Madagascar (1993/4)	230	1	4	22	22	2.6
Lao P.D.R. (1992/3)	230	1	4	24	-	3.6
Kenya (1992/3)	310	1	3	41	41	9.2
Guinea (1994/5)	510	1	2	35	58	2.0
South Africa (1993/4)	2670	1	2	5	5	7.3
Mexico (1992/3)	2976	1	2	5	5	4.5

* *The primary student equivalent cost (public spending) expresses the number of primary school students that could be financed per student in higher levels.*
Sources: Castro-Leal (1995a, 1995b, 1994); Castro-Leal and Dayton (1994); Dayton (1995a, 1995b).

International comparisons of education statistics illustrate the relatively small numbers of students going beyond primary education in Malawi although a large share of GDP is dedicated to the education sector as a whole. In Madagascar and Lao P.D.R., countries of comparable income levels, a secondary student is four times as expensive as a

[11] Tertiary education in Malawi includes Primary Teacher Training, Vocational Training and University.

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primary student, the same as for Malawi in 1994/5 (see Table 12).[12] However, the contrast at the tertiary level is striking. In Malawi, tertiary students are about 70 times as expensive as primary students, while in Madagascar and Lao P.D.R., they are only about 20 times as costly. In Kenya and Guinea, countries with a higher per capita income than Malawi, tertiary-level students are about 40 times as expensive as primary students. In South Africa and Mexico, countries with a larger number of students going beyond primary and a much higher per capita income level, secondary education per student is only twice as expensive as primary, while tertiary students are only five times as costly.

These results indicate that even though a larger share of public money is being spent per student on the early levels of education in Malawi, completion and progression rates remain low at this level. Primary students receive low quality services even though Malawi allocates 70 percent of public education resources to this level and a larger share of its GDP goes to the education sector than in some other countries. In 1994/5, Malawi spent 6.9 percent of its GDP on education, while Lao P.D.R. spent 3.6 percent, Madagascar spent 2.6 percent, and Guinea spent only 2 percent (see Table 12). There is a great need to improve the internal efficiency of primary education in Malawi.

[12] Primary student equivalent costs are computed for each country in the local currency, and all educational levels beyond primary are expressed in terms of the number of primary students that could be financed by the actual cost incurred in subsidizing a student at higher levels.

V. WHO BENEFITS FROM PUBLIC EDUCATION SPENDING?

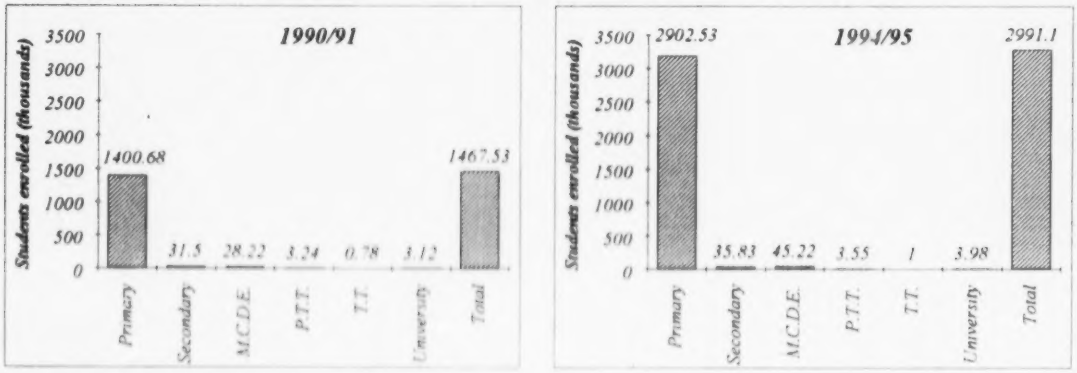
This study uses the *Benefit Incidence Analysis* to examine the distribution of public spending across different socioeconomic groups.[13] The most important advantage of this technique is to measure how well public services are targeted to certain groups in the population, for example the poor, particular regions of interest and girls and women.

The observed patterns of public spending across socioeconomic groups are determined by two main factors. First, government spending allocations to and within the sector on each type of public service. Second, household behavior regarding utilization rates of public services by socioeconomic groups. Thus, the incidence analysis integrates two sources of information: unitary spending by type of service (i.e., the per student annual spending for the education sector); and information on individual utilization rates of public services (i.e., total enrollments by educational level) disaggregated by socioeconomic group, region and gender. In this way, public spending on education is distributed across socioeconomic groups subject to their enrollment rates and the annual public spending *per student* by educational level. The incidence of public spending is the result of: (i) a public policy decision, the *allocation* of public expenditures to and within each sector, and (ii) a private decision, the *behavior* of households.

In Malawi, the majority of school enrollment has traditionally consisted of primary-level students. In 1990/1, students at this level comprised 95 percent of the total while in 1994/5, after a more than two-fold surge in enrollments at this level in a single school-year, the share of these students increased to 97 percent (see Fig. 6). In 1994/5, there was a sizable increase in public spending for education, together with intrasectoral re-allocations towards the primary level. Although policy changes have increased the availability of public funds at this level, in absolute as well as relative terms (see Fig. 7), public primary spending *per student* are the lowest. In addition, the distribution of enrollments across socioeconomic groups shows that poor students have significantly lower enrollments than rich students, even after the recent surge in enrollments (see Chapter II). At the regional level, rural Central and rural Southern regions remain disadvantaged in their primary enrollment rates (see Chapter II).

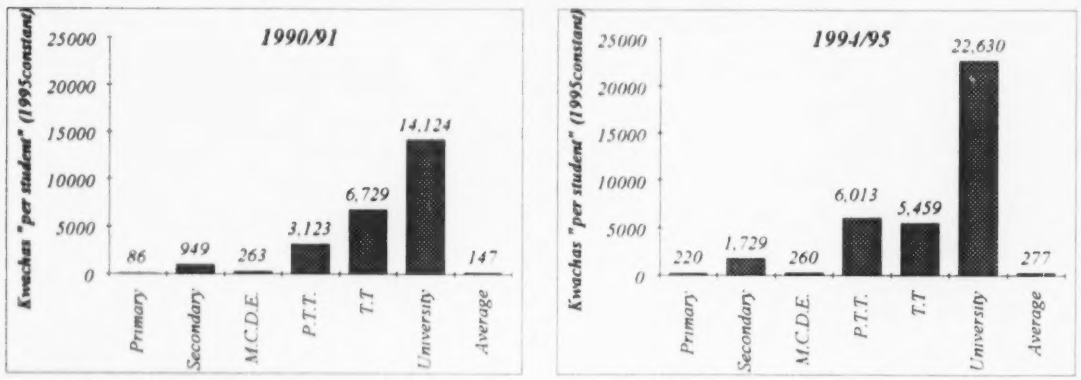
[13] A more detailed description of the methodology is included in Appendix B.

Fig. 6 Student enrollment by all levels
(thousands)



M.C.D.E. = Malawi College of Distance Education
P.T.T. = Primary Teacher Training
T.T. = Technical Training
Sources: MOE (1993); MOE (1995).

Fig. 7 Annual public spending per student by all levels
(MKwachas, in 1994/5 constant terms)



M.C.D.E. = Malawi College of Distance Education
P.T.T. = Primary Teacher Training
T.T. = Technical Training
Sources: MOE (1993); GOM National Budget (1995).

In the following sections we analyze the distribution of *per capita* public spending across socioeconomic groups, regions and gender for all educational levels for 1990/1 and 1994/5.

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Public spending in education has become more pro-poor

Targeting of public education spending to the poor improved significantly between 1990/1 and 1994/5 as a result of the recent policy shift favoring primary education and due to last year's surge in enrollments at this educational level. Although the current distribution of public resources for *all education* is still *weakly pro-poor*, the distribution at the primary level is already *strongly pro-poor*. At present, the challenge is to maintain current enrollment levels in primary schools and simultaneously to improve the quality of education.

If public spending were equally distributed across the population, then every income quintile would receive an exactly equal percentage share of total public resources in the sector.

The education sector in Malawi in 1990/1 had one of the worst distributions of public education spending in Sub-Saharan Africa (see Table 13). But because of the recent surge in primary enrollments, the increase in government spending on the primary education sector, and the budgetary reallocations within the education sector, the distribution of public education spending across income groups has improved considerably.

Table 13

Incidence of public education spending on the poorest and richest quintiles, selected countries, percentage share

Country	*Year*	*Education Spending Benefiting:*	
		the Poorest 20% of the Population (%)	*the Richest 20% of the Population (%)*
Malawi	*1994/5*	*16*	*25*
	1990/1	*10*	*38*
Cote d'Ivoire	*1993*	*14*	*35*
Ghana	*1992*	*16*	*21*
Kenya	*1992/3*	*17*	*21*
Madagascar	*1993*	*8*	*41*
South Africa	*1993*	*14*	*40*
Tanzania	*1993*	*13*	*23*

Note: If public education spending were equally distributed across population quintiles, then the poorest and richest income quintiles (every number in the table above) would receive a 20 percentage share of spending.
Sources: Dayton (1995b); Bernier, Chao, and Demery (1994); Castro-Leal (1995); Demery and Verghis (1994); World Bank (1995).

The share of public education resources received by the poor increased substantially between 1990/1 and 1994/5. The share of all public education spending

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received by the poorest income quintile[14] increased from 10 to 16 percent while the share of the richest income quintile fell from 38 to 25 percent (see Table 13).

Primary education spending observed the most dramatic shift favoring the poor between 1990/1 and 1994/5. In 1994/5, the poorest income quintile received 20 percent of public primary education spending compared to 15 percent in 1990/1 (see Table 14). The share going to the richest income quintile fell to 16 percent in 1994/5 from 24 percent in 1990/1.

Despite this recent progress in primary spending, by 1994/5 inequities in public education spending were still considerable at the secondary and tertiary levels. The poorest income quintile received a 9 percent share of secondary education expenditures and only a 1 percent share of tertiary education spending, while in contrast, the richest income quintile received a 39 percent share of secondary, and a 58 percent share of tertiary education spending.

The Malawi example shows that an effective way to increase the equity of public spending in education is to increase the percentage of total education spending allocated to primary education.

Table 14

Incidence of public education spending on the poorest and richest quintiles, 1990/1 and 1994/5, percentage share

Educational Level	*Year*	*Education Spending Benefiting:*	
		the Poorest 20% of the Population (%)	*the Richest 20% of the Population (%)*
All Education	*1990/1*	*10*	*38*
Primary		*15*	*24*
Secondary		*7*	*41*
Tertiary		*3*	*61*
All Education	*1994/5*	*16*	*25*
Primary		*20*	*16*
Secondary		*9*	*39*
Tertiary		*1*	*58*

Note: If public education spending were equally distributed across population quintiles, then the poorest and richest income quintiles (every number in this table) would receive a 20 percentage share of spending.
Sources: HESSEA (1990/1); MOE (1993, 1995); GOM National Budget (1995).

[14] Income quintiles are created by ranking every individual from the poorest to the richest and then dividing the population into five groups each containing exactly 20 percent of all individuals. Thus, the poorest income quintile contains the poorest one-fifth of the population while the richest income quintile contains the richest one-fifth of the population.

The distribution of public resources in 1990/1 and 1994/5 by educational levels and across income quintiles is shown in Figures 8 and 9 together with the Lorenz distribution of household expenditures. The diagonal line (or 45° line) is also known as the line of ***absolute equality*** since it goes through those points where the cumulative share of the population equals the cumulative share of public education spending.

In 1990/1, public spending at the primary and secondary educational levels is *weakly pro-poor* because their distributions are in between the diagonal line and the Lorenz curve; which means that the poor receive a smaller share of public spending than their population share but the poor's share of spending is relatively larger than their household expenditure share. The distribution of public spending in tertiary education is as inequitable as the Lorenz distribution of total household expenditures

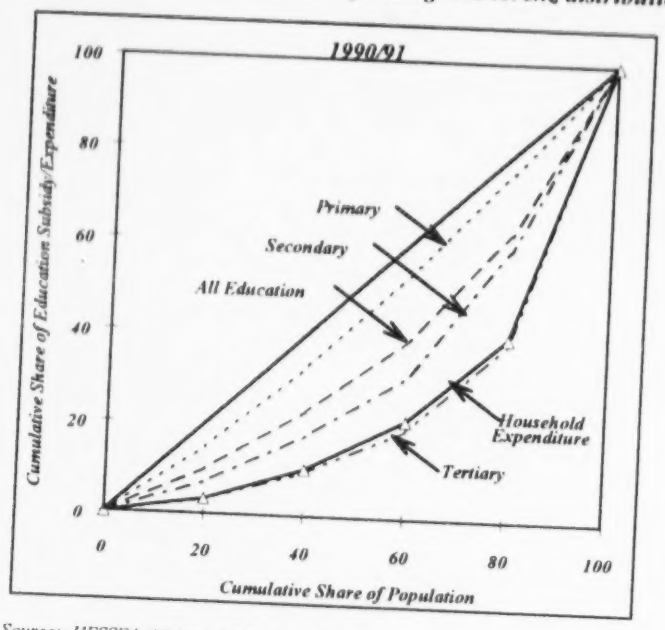
By contrast, in 1994/5 public spending at the primary level is *strongly pro-poor* because its distribution is above the diagonal line; which means that the poor receive a larger share of public spending than their population share. Secondary education spending remains weakly pro-poor. Tertiary education spending is as inequitable as the Lorenz distribution.

In *per capita* terms *all education* annual spending more than tripled between 1990/1 and 1994/5. All education spending *per capita* in 1990/1 were MK23 compared with MK82 in 1994/5, expressed in 1995 constant terms (see Figures 10 and 11). At the primary level the increase in public resources was four-fold. Primary education spending *per capita* in 1990/1 were MK14 compared with MK61 in 1994/5, expressed in 1995 constant terms.

The poorest income quintile received MK14 in 1990/1 *per capita* annually in all education spending, of which 85 percent were received through primary education, and MK57 in 1994/5, 93 percent through primary education. By contrast, the richest income quintile received MK44 in 1990/1 *per capita* annually in all education spending, of which 37 percent were received through primary education, and MK137 in 1994/5, of which 48 percent through primary education.

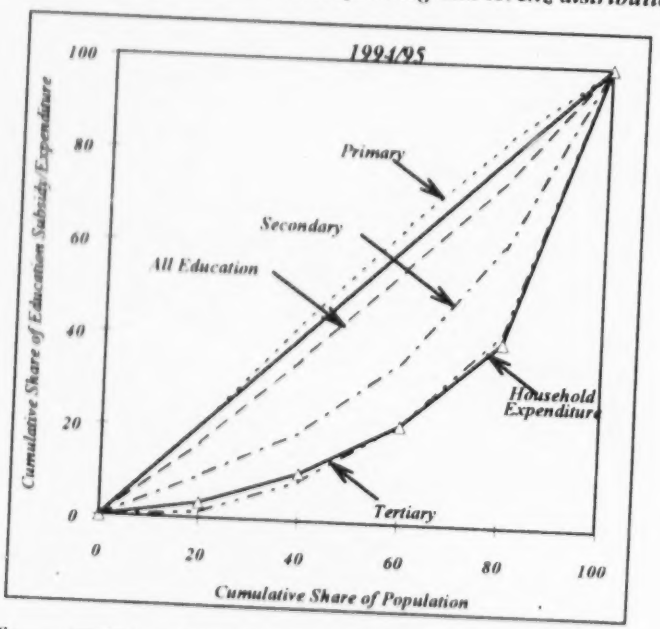
Thus, inequality in annual *all education* spending *per capita* declined across socioeconomic groups between 1990/1 and 1994/5. All education spending *per capita* are more than 3 times larger for the richest than for the poorest income quintile in 1990/1, while the difference is 2.5 times in 1994/5. The significant reduction in the inequality of public education spending is largely explained by the sharp decline in the inequality of public spending at the primary level.

Fig. 8 Distribution of public education spending and lorenz distribution, 1990/1



Sources: HESSEA (1990/1); MOE (1993).

Fig. 9 Distribution of public education spending and lorenz distribution, 1994/5



Sources: HESSEA (1990/1); MOE (1995); GOM (1995

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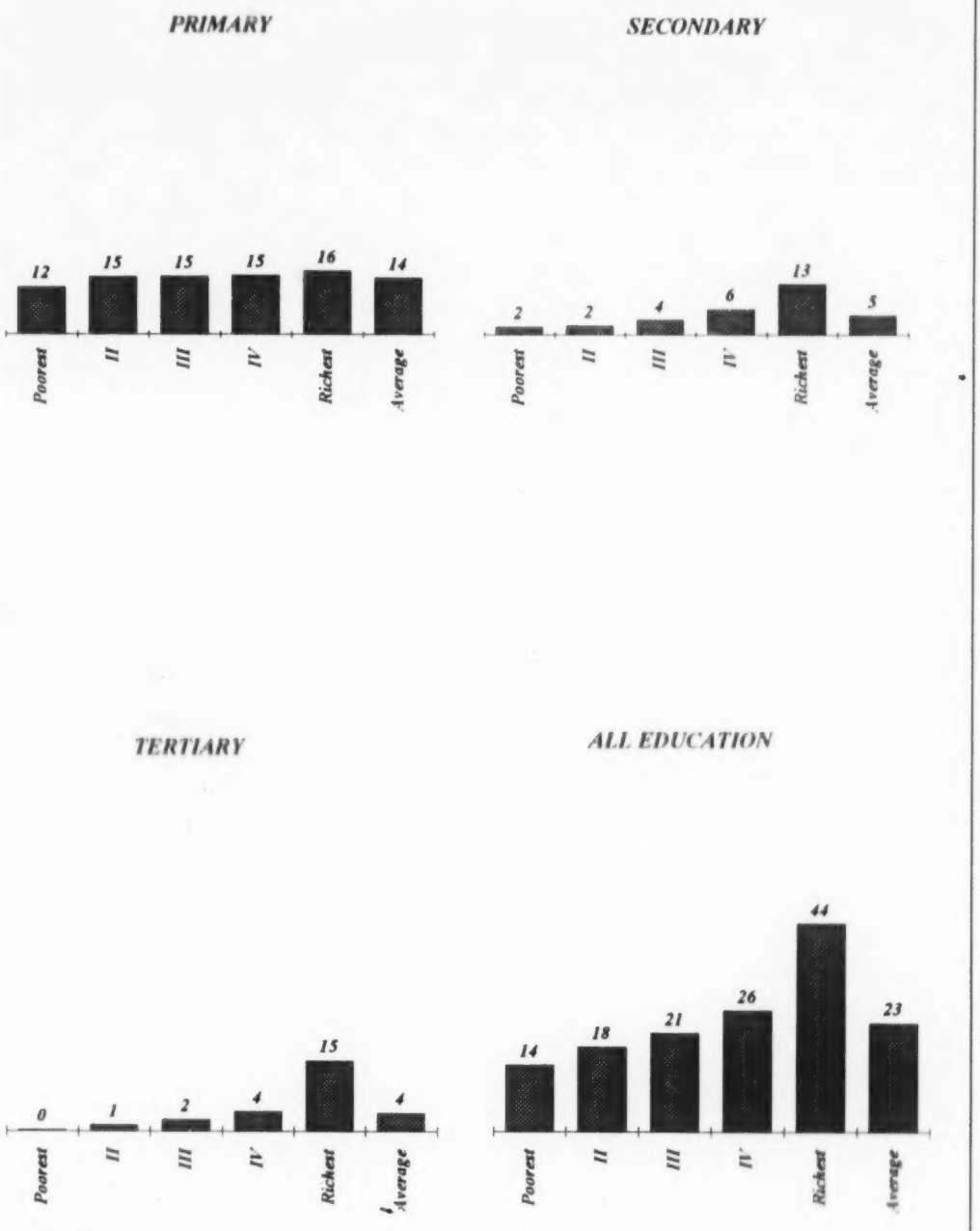
Fig. 10 Annual education spending per capita by level and quintile, 1990/1
(MKwachas, in 1994/5 constant terms)



Sources: HESSEA (1990/1); MOE (1993).

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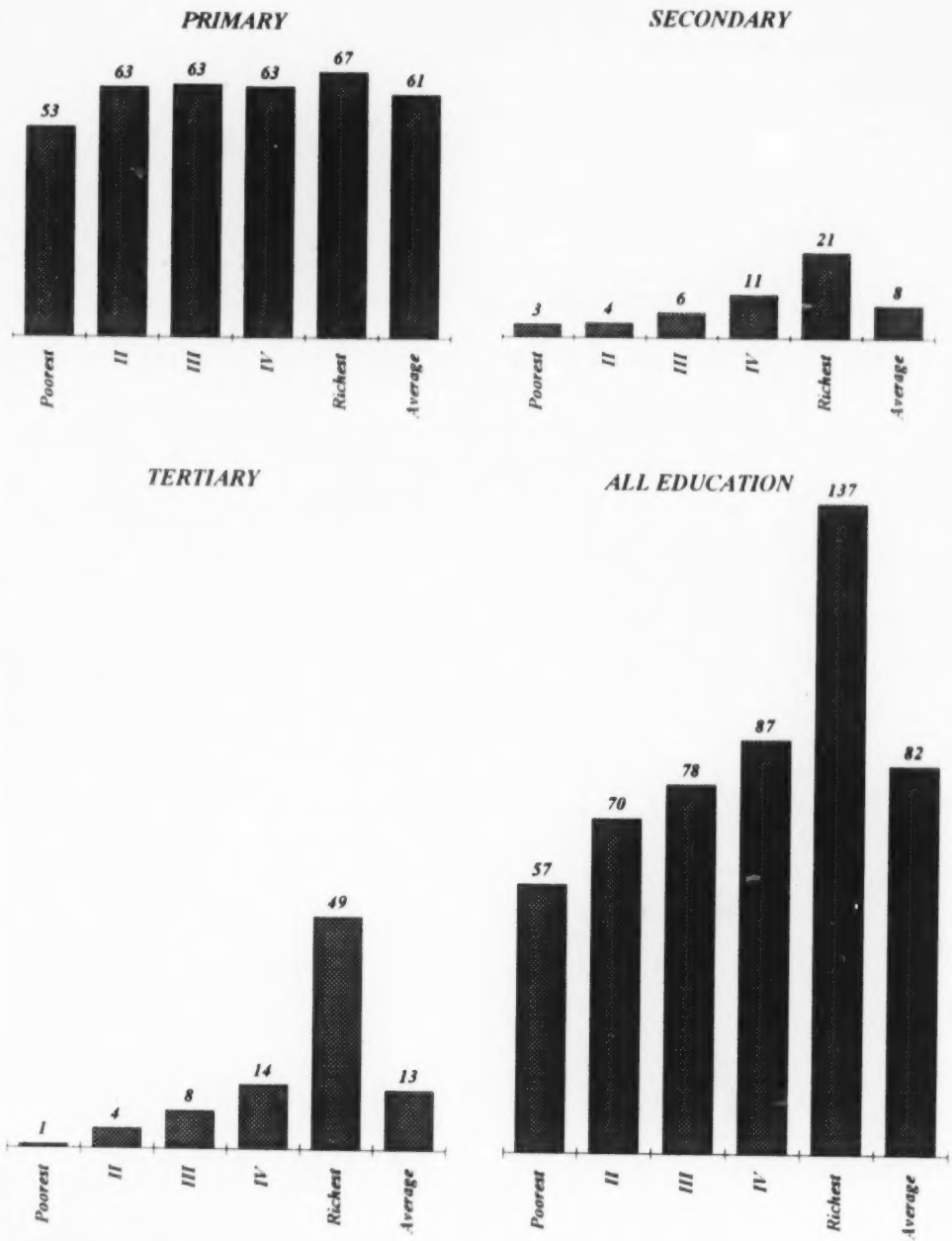
Fig. 11 Annual education spending per capita by level and quintile, 1994/5 (MKwachas)



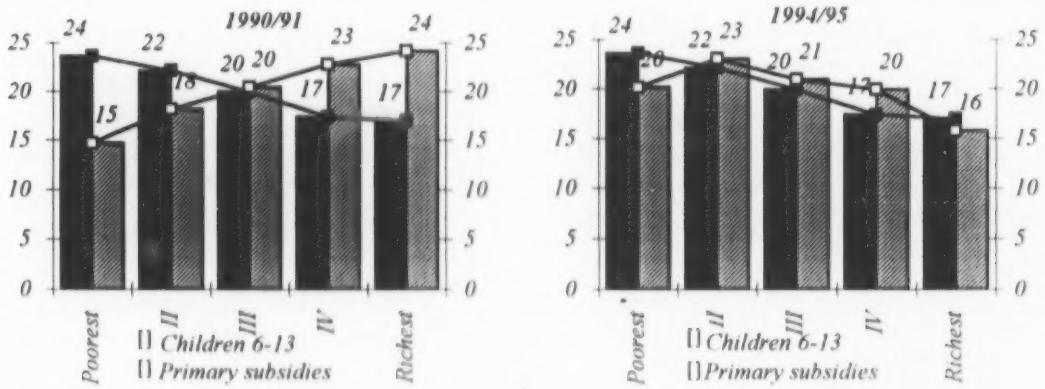
Sources: HESSEA (1990/1); MOE (1995); GOM National Budget (1995).

More primary school children are among the poor

A larger concentration of primary school-age children among the poor imply that their need for public education resources is relatively larger. Although public primary spending is more equally distributed in 1994/5 than in 1990/1, the poorest income quintile still receives less than its school-age population share.

The poorest income quintile in Malawi has a substantially younger population profile than the richest income quintile. In the poorest income quintile, there is one child in the 6 to 13 year old group for every two adults in contrast with one child for every four adults in the richest income quintile. When the distribution of primary education spending across income quintiles is compared with the distribution of school-age children 6 to 13 years old, it is evident that even in 1994/5 children in the poorest income quintile continue to receive a smaller share of public resources than children in other socioeconomic groups (see Fig. 12).

Fig. 12 Primary education spending and primary school-age children, 1990/1 and 1994/5 (percentage shares)



Sources: HESSEA (1990/1); MOE (1993).

Sources: HESSEA (1990/1); MOE (1995);GOM (1995).

If public spending on primary education were equally distributed across socioeconomic groups, then every income quintile would receive a percentage share of public resources equal to its proportion of primary school-age children. Twenty-four percent of all Malawian children 6 to 13 years of age are in the poorest income quintile in comparison with 17 percent in the richest income quintile. While the share of public spending in primary education for the poorest income quintile increased from 15 to 19 percent between 1990/1 and 1994/5, this share is still smaller than the 24 percentage share of school-age children.

Girls receive about half the public education spending received by boys

The public education spending received by girls was about half of the spending received by boys in both 1990/1 and 1994/5 (see Appendix Tables A.8 and A.9). Girls received MK17 per capita in 1990/1 compared with MK29 received by boys. In 1994/5, these figures were K63 and K101 respectively.

At the primary level overall gender disparities are not wide, they are wider at the secondary level and they are the widest at the tertiary level. At the primary level the gender difference is about 25 percent in favor of boys, at the secondary level girls receive half the spending of boys and at the tertiary level boys receive 7 times as much as girls.

The poorest income quintile has the widest gender disparities at every educational level in both 1990/1 and 1994/5. The poorest girls at the primary level received two-thirds of the spending received by boys, at the secondary level the poorest girls received only one-fourth of the spending received by boys and at the tertiary level the poorest girls do not receive any spending since the HESSEA survey reported only males enrolled at this level among the poorest.

Public primary education resources are smaller in the rural Center and rural South because enrollments still lag behind

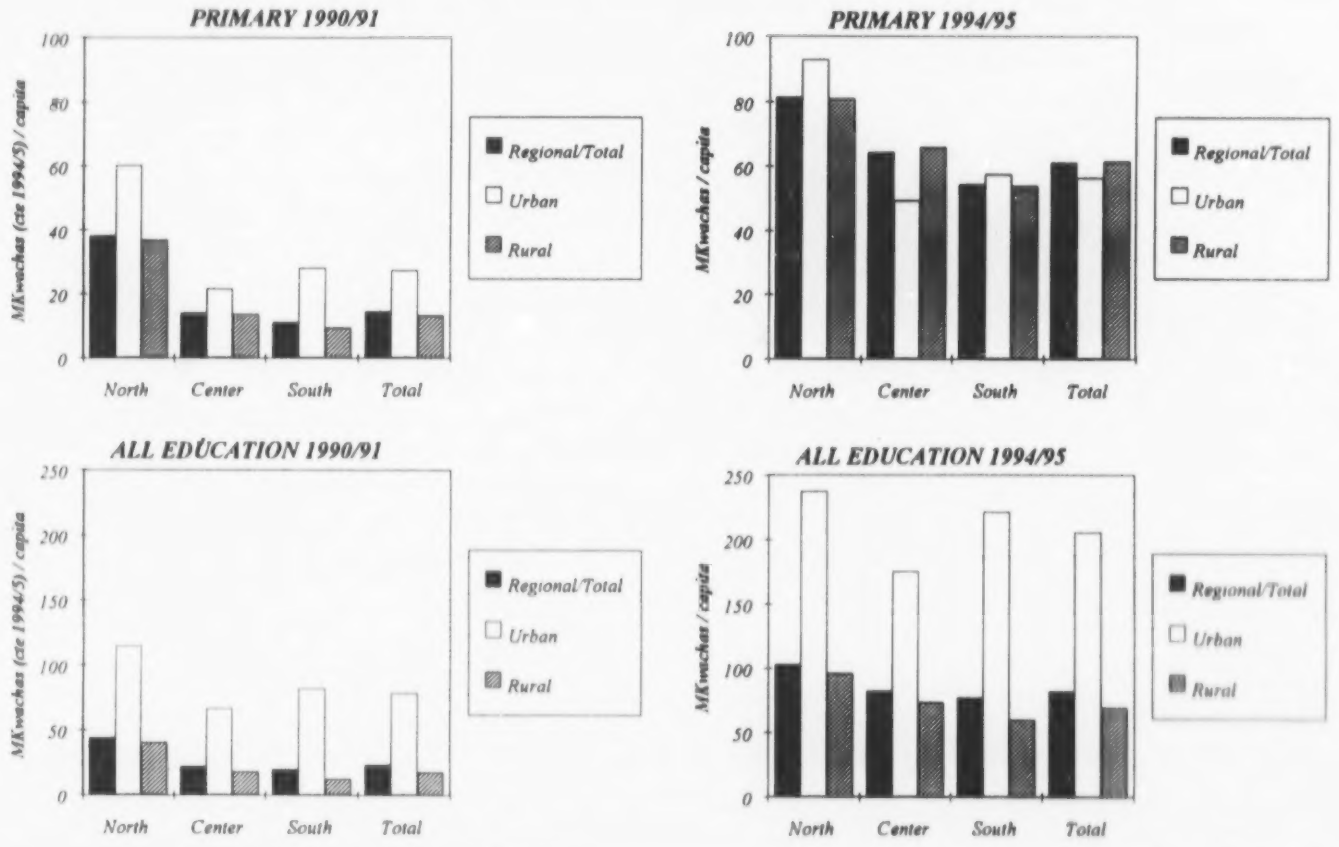
Government efforts to equalize the regional allocation of public education resources have only been partially matched by an increase in enrollments. Between 1990/1 and 1994/5 the per primary student spending increased substantially in the Center and South, so that by 1994/5 it is about the same in every region (see Table 15). At the secondary level, regional per student spending remained practically unchanged in 1994/5 compared to 1990/1. Tertiary level institutions are concentrated in the Central and Southern regions, thus they continued to receive a larger per student spending in both years (see Appendix Tables A.10 and A.11).

Table 15
Per primary student spending, 1990/1 and 1994/5
by region
(in constant 1994/5 MKwachas)

Region	1990/1	1994/5
North	125	221
Center	87	229
South	71	212
Total	86	220

Source: MOE (1995)

Fig. 13 Annual primary and all education subsidy per capita, 1990/91 and 1994/95
(in constant 1994/5 MKwachas)



Sources: HESSEA (1990/91); MOE (1993); MOE (1995); GOM National Budget (1995).

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The largest increase in enrollments in 1994/5 occurred in the rural Center and the rural South. However, their regional share of enrollments is still smaller than the Northern region and urban areas. Thus, appropriate incentives need to be designed for households in the poorest and rural regions to increase their enrollments further.

The average *per capita* spending compares the distribution of public education resources by region. Spending in per capita terms are the result of the education spending received by each student enrolled and the share of the total population attending school. When per student spending are about the same, different regions are able to claim a larger share of public resources if a larger share of the population is attending school.

Per capita education spending, as opposed to per student, in Figure 13, are obtained through the regional *Benefit Incidence Analysis* (similar to the analysis by income groups - see first paragraphs of this section for a brief explanation).[15]

Education spending by individuals are smaller in the Central and Southern regions because primary-level enrollments are smaller as a share of the total regional population. Thus, even if primary education resources per student are very similar, individual utilization rates determine the amount of public education resources claimed by each region.

Secondary and tertiary-level education spending for individuals are only 25 percent of total education spending per capita in 1994/5 because the share of the population enrolled at these levels in Malawi is very small. Total enrollments beyond primary school in Malawi represent only 0.8 percent of the total population.

Further increases in primary enrollments in the poorest regions of Malawi would have to rely heavily on incentives at the household level. The regional analysis of public education resources shows that the Central and Southern rural regions still lag behind in 1994/5 compared to 1990/1. This occurs even though public resources per each student enrolled at the primary level were equalized across regions and more than doubled in real terms.

The recent education reform lowered the direct costs to households of sending children to primary school. However, in order for children to remain in school, the perceived total return to education needs to be higher than the total cost. Quality

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[15] Regional per capita education spending at each level in 1990/1 is estimated on the basis of school enrollments by level and by region reported in the HESSEA survey (1990/1) and using regional recurrent spending data by educational level reported by the GOM (1995). Regional per capita primary education spending in 1994/5 use regional primary school enrollments and recurrent education spending by region reported by the MOE (1995) and GOM (1995). Regional per capita secondary and tertiary education spending in 1994/5 is calculated by disaggregating 1994/5 national school enrollments at these levels on the basis of the same regional distribution obtained from the HESSEA survey for 1990/1 and using regional recurrent education spending data by level for 1994/5 reported by the GOM (1995).

deterioration lowers the perceived net return by increasing the number of years of education necessary to acquire the minimum skills and thus, increases the burden of direct and indirect costs paid by households. Future efforts to increase rural enrollments need to pay close attention to the sources of regional disparities.

Many questions still remain about the perceived returns within households of sending children, in particular girls, to primary school. In the different regions of Malawi, the sources of income that children can bring to the household to complement the main source of support vary substantially. Therefore, in addition to regional cultural differences, perceived returns to education as well as the opportunity cost of sending children to school in the different regions also vary considerably.

VI. POLICY IMPLICATIONS

Expanding access and reducing remaining inequities in education

Income and regional disparities in primary school enrollments have recently narrowed in Malawi, but the poorest children are still least likely to attend and the rural Center and rural South still lag behind in enrollments. Poor girls have the lowest school attendance in the country. These indicators clearly suggest that equitable access to education could be greatly improved by targeting public resources to basic education, poor regions and girls. Inequities in the distribution of education resources still remain across regions, within educational levels and by gender. Thus, the Malawian education reform runs the risk that if school enrollments were to decline among the poor then recent gains in allocating resources to them could be reversed.

A larger portion of public education resources needs to be spent in the rural Central and rural Southern regions which contain most of the poor and have the worst education indicators. Allocating public resources to basic education in these regions would improve the access to the poor.

Primary-level enrollments for girls are systematically lower than for boys at every income level and region. In addition, girls aged 13 or older are more likely to drop out of primary school than boys in the same age group. Therefore, it is crucial to put in place incentives for early enrollment and retention of girls in primary schools, so that they at least complete the full primary school cycle.

Increasing effectiveness and quality of primary education

The quality of primary education, already poor, has declined further as enrollments have surged. This deterioration can be explained by two reinforcing mechanisms associated with public social spending. On the one hand, the historical under-funding of infrastructure and supplies already placed Malawi's public primary schools among the most poorly-equipped in Africa. On the other hand, most of the recent increase in public primary spending was allocated to finance the salaries of newly-recruited teachers. In the future, it will be desirable to establish a better balance between wage and non-wage budgetary allocations in order to increase the effectiveness and quality of primary education in Malawi..

The education sector in Malawi needs to increase the availability of classroom supplies and teaching materials, and to train teachers at the primary level, the level with the greatest returns as well as the highest externalities for society as a whole. At present, the challenge is to maintain current enrollment levels in primary schools and, simultaneously, to improve the quality of education.

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APPENDIX A

School enrollment and public education spending by quintiles, regions and gender

Table A.1
Highest education level attended by 16 to 35 year olds
(percentage of age group)

Highest Education Level Attended	Male	Female	All
None	20.2	40.9	31.5
Standard I-IV	24.4	23.6	23.9
Standard V-VIII	40.5	26.0	32.6
Some Secondary	7.4	4.0	5.5
Secondary Complete	4.6	1.7	3.1
University	0.9	0.2	0.5
Literacy Training	1.9	3.5	2.8
Other	0.1	0.1	0.1
Total	100.0	100.0	100.0

Source: HESSEA (1990/1)

Table A.2
Highest education level attended by 35+ year olds
(percentage of age group)

Highest Education Level Attended	Male	Female	All
None	34.3	63.5	49.0
Standard I-IV	29.3	21.4	25.3
Standard V-VIII	23.3	8.9	16.0
Some Secondary	4.4	1.4	2.9
Secondary Complete	3.5	0.5	2.0
University	1.0	0.3	0.7
Literacy Training	3.7	3.8	3.8
Other	0.5	0.2	0.3
Total	100.0	100.0	100.0

Source: HESSEA (1990/1)

Table A.3
Gross enrollment rates in primary education, 1990/1
by region, area of residence and gender

Region	Rural		Urban		National		
	Male	Female	Male	Female	Male	Female	Total
North	118	116	142	119	120	116	118
Center	76	71	116	107	81	75	78
South	78	62	124	106	83	67	75
National	82	71	122	108	87	75	81

Source: HESSEA (1990/1)

Table A.4
Gross enrollment rates in Standards I to IV, 1990/1
by region, area of residence and gender

Region	Rural		Urban		National		
	Male	Female	Male	Female	Male	Female	Total
North	140	139	160	142	142	139	140
Center	105	101	137	139	108	105	107
South	108	89	152	141	112	95	103
National	111	98	146	140	114	103	108

Source: HESSEA (1990/1)

Table A.5
Gross enrollment rates in Standards V to VIII, 1990/1
by region, area of residence and gender

Region	Rural		Urban		National		
	Male	Female	Male	Female	Male	Female	Total
North	96	92	122	95	98	92	95
Center	42	35	94	76	49	40	44
South	46	29	98	76	52	36	44
National	51	38	98	76	56	43	50

Source: HESSEA (1990/1)

Table A.6
Net and gross enrollment rates in secondary education, 1990/1
by region and area of residence

	Net Enrollment Rates			Gross Enrollment Rates		
Region	Rural	Urban	Total	Rural	Urban	Total
North	1.2	8.4	1.9	12.6	31.5	14.5
Center	0.4	11.9	1.9	5.1	36.9	9.4
South	1.4	10.8	2.6	5.0	42.8	9.8
National	1.0	11.0	2.3	6.0	39.4	10.2

Source: HESSEA (1990/1)

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Table A.7
Gross enrollment rates in secondary education, 1990/1
by region, area of residence and gender

Region	Rural		Urban		National		
	Male	Female	Male	Female	Male	Female	Total
North	16.9	9.8	42.4	21.6	20.0	10.8	14.5
Center	8.7	1.6	43.5	30.5	13.4	5.5	9.4
South	7.3	2.5	54.3	32.6	12.8	6.7	9.8
National	8.8	3.3	58.8	30.7	13.7	6.9	10.2

Source: HESSEA (1990/1)

Table A.8

Distribution of annual education spending per capita, 1990/1

(MKwachas, 1995 constant terms)

PRIMARY					TERTIARY				
Quintile	Males	Females	Total	Share	Quintile	Males	Females	Total	Share
Bottom 20%	14	10	12	15%	Bottom 20%	0	0	0	3%
II	17	13	15	18%	II	2	0	1	7%
III	16	13	15	20%	III	5	0	2	10%
IV	17	13	15	23%	IV	6	2	4	19%
Top 20%	16	16	16	24%	Top 20%	26	5	15	61%
Average	16	13	14		Average	7	1	4	

SECONDARY					ALL EDUCATION				
Quintile	Males	Females	Total	Share	Quintile	Males	Females	Total	Share
Bottom 20%	3	0	2	7%	Bottom 20%	18	11	14	10%
II	3	2	2	11%	II	22	14	18	13%
III	6	2	4	14%	III	27	15	21	16%
IV	7	5	6	28%	IV	31	21	26	24%
Top 20%	16	9	13	41%	Top 20%	59	30	44	38%
Average	7	3	5		Average	29	17	23	

Sources: HESSEA (1990/91); MOE (1993).

Table A.9

Distribution of annual education spending per capita, 1994/5

(MKwachas, 1995 constant terms)

PRIMARY				
Quintile	Males	Females	Total	Share
Bottom 20%	63	43	53	20%
II	72	54	63	23%
III	69	58	63	21%
IV	71	55	63	20%
Top 20%	67	66	67	16%
Average	68	54	61	

SECONDARY				
Quintile	Males	Females	Total	Share
Bottom 20%	4	0	3	9%
II	5	3	4	10%
III	10	3	6	16%
IV	12	9	11	25%
Top 20%	27	16	21	39%
Average	11	5	8	

TERTIARY				
Quintile	Males	Females	Total	Share
Bottom 20%	2	0	0	1%
II	8	0	4	7%
III	15	1	8	13%
IV	21	6	14	20%
Top 20%	84	15	49	58%
Average	22	4	13	

ALL EDUCATION				
Quintile	Males	Females	Total	Share
Bottom 20%	70	44	57	16%
II	85	57	70	19%
III	95	61	78	20%
IV	104	70	87	20%
Top 20%	179	97	137	25%
Average	101	63	82	

Sources: HESSEA (1990 91); MOE (1995); GOM National Budget (1995).

Table A.10 Education spending per student, 1990/1
(in constant 1994/5 MKwachas)

Level	Region	Regional/ Total	Urban	Rural
Primary	North	125	227	120
	Center	87	88	89
	South	71	108	62
	Total	**86**	**108**	**82**
Secondary[a]	North	712	886	681
	Center	709	1,113	265
	South	547	732	391
	Total	**626**	**841**	**375**
Tertiary[b]	North	2,447	19,523	1,123
	Center	7,940	32,730	667
	South	10,560	15,866	1,346
	Total	**8,323**	**19,293**	**990**
All Education	NORTH	163	447	147
	CENTER	148	348	116
	SOUTH	141	421	80
	TOTAL	**147**	**397**	**105**

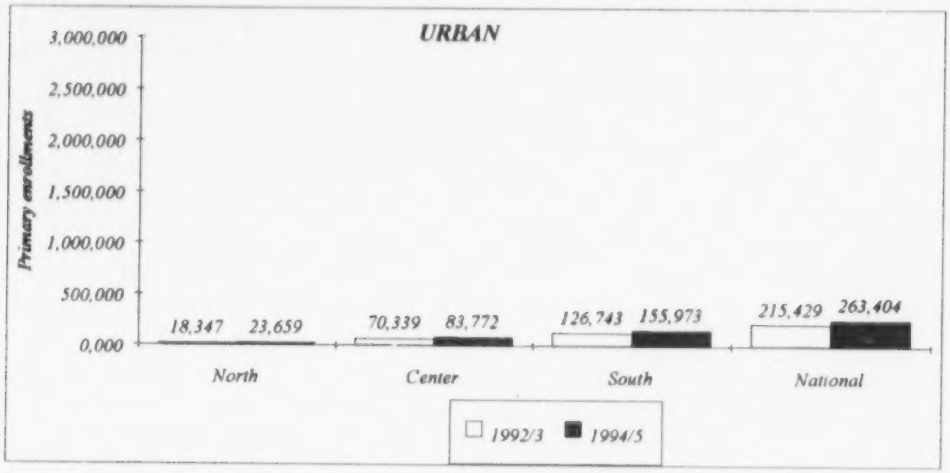
[a] Secondary Level includes Secondary School and M.C.D.E.
[b] Tertiary Level includes Primary Teacher Training, Technical Training and University.
Source: MOE (1995)

Table A.11 Education spending per student, 1994/5
(MKwachas)

Level	Region	Regional/ Total	Urban	Rural
Primary	North	221	217	221
	Center	229	206	231
	South	212	209	213
	Total	**220**	**208**	**221**
Secondary[a]	North	1,069	1,329	1,022
	Center	927	378	1,428
	South	840	600	1,124
	Total	**909**	**564**	**1,195**
Tertiary[b]	North	4,854	42,428	1,941
	Center	14,325	58,251	1,438
	South	20,450	30,224	3,473
	Total	**15,523**	**36,124**	**2,164**
All Education	NORTH	264	499	250
	CENTER	277	648	246
	SOUTH	281	711	226
	TOTAL	**277**	**672**	**237**

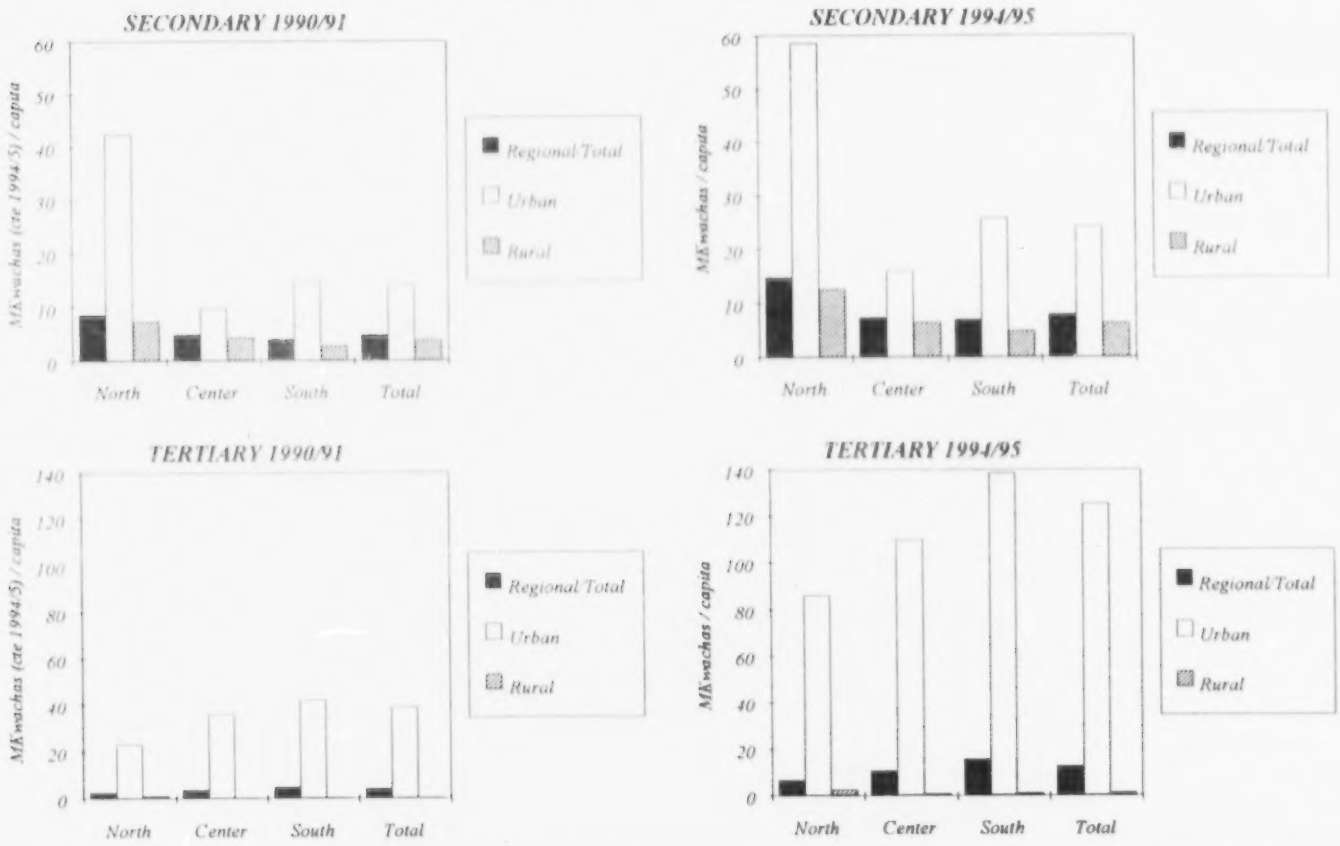
[a] Secondary Level includes Secondary School and M.C.D.E.
[b] Tertiary Level includes Primary Teacher Training, Technical Training and University.
Source: MOE (1995)

Figure A.1
Urban primary enrollments in 1992/3 and 1994/5, by regions



Sources: MOE (1993); MOE (1995).

Fig. A.2 Annual secondary and tertiary education subsidy per capita, 1990/91 and 1994/95
(in constant 1994/5 MKwachas)



Sources: HESSEA (1990/91); MOE (1993); MOE (1995); GOM National Budget (1995).

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APPENDIX B

Methodology used to compute the distribution of education spending by socioeconomic groups

This appendix describes the use of Malawian data to provide estimates of *per capita* spending across five socioeconomic groups by educational level for 1990/1 and 1994/5. This analysis divides the population into five socioeconomic groups, constructed by ranking each individual from the poorest to the richest on the basis of total household expenditure per adult equivalent. Then, each income quintile[16] contains exactly 20 percent of the population. The methodology used is known as *Benefit Incidence Analysis* and it brings together information on school enrollments and information on *per student* public spending.

Per capita education spending in 1990/1 are estimated on the basis of enrollments by educational level reported in the HESSEA survey (1990/1). The same *per student* spending, MK40 for primary education, MK287 for secondary education and MK3,816 for tertiary education is allocated to all enrolled (MOE, 1993).

Per capita primary education spending for 1994/5 cannot be calculated as straightforward as those in 1990/1. In 1994/5 there was no household survey data available, thus information on primary-level enrollments by socioeconomic group had to be derived on the basis of enrollments by regions provided by the MOE (1995) and taking HESSEA data as our baseline. The same *per student* spending, MK220 for primary education, is allocated to all enrolled (MOE, 1995).

The following algorithm describes the procedure for estimating primary-level enrollments by socioeconomic groups (income quintiles) in 1994/5.

X_i = total regional enrollments in 1990/1

Y_i = total regional enrollments in 1994/5

g_i = growth in regional enrollments between 1990/1 and 1994/5

$= 1 + \{(Y_i - X_i)/ X_i\}$

---

[16] We use expenditure and income interchangeably throughout the paper, but bear in mind that the welfare measure for ranking individuals is total household expenditure per adult equivalent.

Z_j = total enrollments by income quintiles in 1990/1

T_j = total projected enrollments by income quintiles in 1994/5

W_{ij} = regional share of total enrollments by income quintiles in 1990/1

where i = {North (N), Center (C), South (S)}

where j = {Poorest (I), II, III, IV, Richest (V)}

Therefore the general formula for T_j is:

$$T_j = (Z_j * W_{Nj} * g_N) + (Z_j * W_{Cj} * g_C) + (Z_j * W_{Sj} * g_S)$$

For example, total enrollments in primary school for the poorest income quintile in 1994/5 are:

$$T_I = (Z_I * W_{NI} * g_N) + (Z_I * W_{CI} * g_C) + (Z_I * W_{SI} * g_S)$$

Using actual numbers:

$$T_I = (235{,}114 * 0.15 * 1.48) + (235{,}114 * 0.19 * 1.77) + (235{,}114 * 0.66 * 1.62)$$

T_I = 382,648 = enrollment of primary-level students from the poorest income quintile in 1994/5.

Per capita secondary and *tertiary* education spending for 1994/5 use projected school enrollments across socioeconomic groups. Enrollments at the secondary and tertiary levels across socioeconomic groups were calculated on the basis of the overall change in enrollments between 1990/1 and 1994/5, using MOE statistics. HESSEA provided the baseline information on school enrollment. The share of secondary enrollments to the total population increased from 0.78 to 0.88 percent and the share of tertiary enrollments to the total population increased from 0.05 to 0.08 percent between 1990/91 and 1994/95. We assumed the increase in enrollments was the same across all income quintiles. The same *per student* spending by educational level, MK909 for secondary education and MK15,523 for tertiary education, is allocated to all enrolled (MOE,1995).

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